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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,912

02/10/2006

Takashi Sasaki

050395-0367

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EXAMINER

PAK, SUNG H

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

08/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,912

Applicant(s)

SASAKI ET AL.

Examiner

Sung H. Pak

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2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/10/06, 12/15/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

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DETAILED ACTION

Information Disclosure Statement

Information disclosure statement filed 2/10/2006, and 12/15/2006 have been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 9, 12-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Ball et al. (US 2005/0201699 A1- "*Ball*").

Ball discloses a method of manufacturing optical fiber preform comprising steps of: subjecting a starting pipe to an inside vapor phase deposition so that a glass layer to be formed into a core and a glass layer to be formed into a part of a cladding are deposited inside the starting pipe (paragraph 0022), the glass layers each containing at least one of fluorine, germanium, phosphorous, and chlorine (paragraph 0022), the starting pipe being made of silica glass and having an outside diameter in the range of 20 mm to 150 mm and a wall thickness in the range of 2 mm to 8 mm (paragraph 0029- outer diameter of 25 mm and wall thickness of 25mm – 19mm = 6mm), and thereby forming a pipe having a glass layer to be formed into a

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core; and collapsing said pipe so as to form a glass rod in which the concentration of OH groups is 10 weight ppm or less (paragraphs 0022 & 0029).

Further, *Ball* discloses that such concentration of hydroxyl group extends to at least a depth of 1mm (*Ball* discloses that it is desirable to have “the glass tube” (meaning the entire glass tube including the entire thickness of the tube wall) “essentially free of water... mean[ing] having an –OH content preferably less than about 100ppb...” – paragraph 0022);

wherein the concentration of hydroxyl groups is 1 weight ppm or less (e.g. paragraph 0022);

wherein the starting pipe is a pipe made of a silica glass containing fluorine (paragraph 0022);

wherein the starting pipe is formed by depositing fine glass particles, followed by dehydration and consolidation, and the concentration of hydroxyl group present in the starting pipe is 0.01 weight ppm or less (paragraph 0022);

wherein the collapsing comprises a first heating step in which one end of the pipe having the glass layer to be formed into a core is heated and collapsed and a second heating step in which the pipe having the glass layer to be formed into a core is heated and collapsed from the one end to the other end, and a surface heating temperature T1 of the one end in the first heating step is higher than a surface heating temperature T2 of the heated part of the pipe in the second heating step, the pipe having the glass layer to be formed into a core (paragraph 0023-0024);

wherein the heat source may be an induction furnace, resistance furnace, or plasma torch (paragraph 0025);

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wherein said resulting glass rod is inserted into a jacket pipe, and the glass rod and the jacket pipe are drawn while they are being unified together by heating (paragraph 0027).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5-8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ball et al. (US 2005/0201699 A1- "*Ball*") in view of Ganz et al. (US 2006/0191294 A1- "*Ganz*").

Ball discloses a method of manufacturing optical fiber preform as discussed above. However, it does not explicitly teach unevenness of the wall thickness of the pipe being less than 0.3%, or the non-circularities of the pipe being less than 1%.

On the other hand *Ganz* explicitly teaches formation of optical fiber preform tube, where the surface roughness is around $0.06\text{ }\mu\text{m}$ which would inherently result in surface unevenness less than 0.3% and (therefore) non-circularity less than 1%. Such features would be well known to be advantageous and desirable to one of ordinary skill in the art because they allow for production of optical fiber preform material of consistent and reliable quality. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of *Ball* to have surface unevenness being less than 0.3%, or the non-circularities of the pipe being less than 1%.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ball et al.* (US 2005/0201699 A1- "*Ball*").

Ball discloses a method of manufacturing optical fiber preform as discussed above. However, *Ball* does not explicitly teach the polarization mode dispersion being less than $0.15\text{ ps/km}^{1/2}$ or absorption loss being less than 0.2 dB/km at $1.38\text{ }\mu\text{m}$. However, low polarization mode dispersion (such as that less than $0.15\text{ ps/km}^{1/2}$) or low absorption loss (such as that less than 0.2 dB/km) are well known in the optical fiber art. Low polarization mode dispersion and low absorption loss are well known to be advantageous and desirable because they allow for optical transmission fibers capable low error, high bandwidth optical signal transmission. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of *Ball* to have larization mode dispersion being less than $0.15\text{ ps/km}^{1/2}$ or absorption loss being less than 0.2 dB/km at $1.38\text{ }\mu\text{m}$.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sung Pak/
Sung H. Pak
Primary Patent Examiner
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